

# HOW BANKS RESPOND TO NEGATIVE INTEREST RATES: EVIDENCE FROM THE SWISS EXEMPTION THRESHOLD

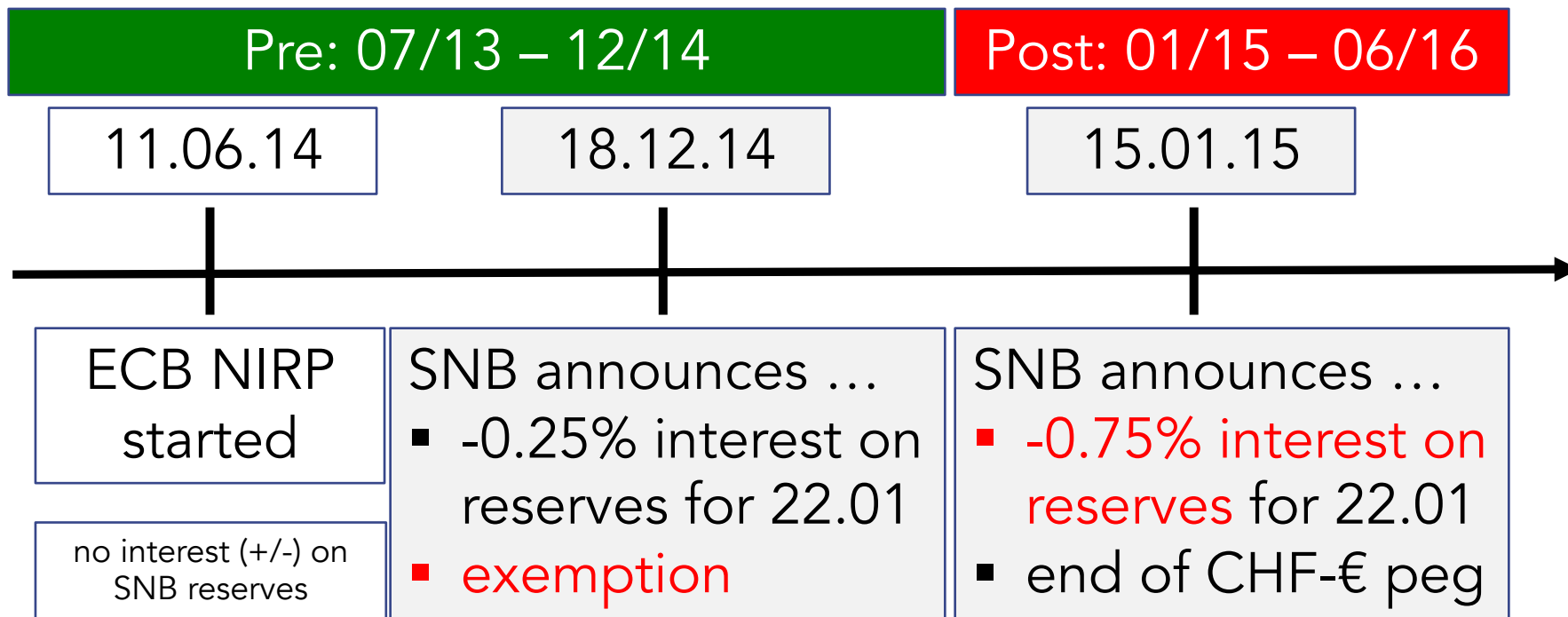
*FDIC/JFSR 18th Annual Bank Research Conference - September 6-7, 2018*

Christoph Basten (University of Zürich) and Mike Mariathasan (KU Leuven)

# INTRODUCTION

- We investigate how 50 domestically owned retail banks reacted to Switzerland's negative interest rate policy (NIRP).
  - DiD-analysis with continuous treatment intensity and bank & time FE's
  - rich bank-level data includes monthly balance sheets & reference rates
- Since 2014: NIRPs in DNK, SWE, EU, CHE, JPN
  - novel monetary policy tool; NIRP designs differ wrt. to interest rate & exemption
- *Adverse NIRP-exposure & non-neg. deposit rates are costly; banks preserve their profitability but become riskier.*
  - portfolio rebalancing towards riskier assets (loans/mortg./fin.) → credit & market risk
  - deleveraging, but regulatory capital decreases
  - liabilities are restructured towards shorter maturities → interest rate risk

# THE SWISS NIRP – TIMING



- also: **month-by-month effects** relative to 07/13
  - robust to alternative Pre/Post definitions
  - Post from Q1/15 for risk measures & from H1/15 for income variables

# THE SWISS NIRP – DESIGN

- banks are charged -0.75% on

$$\text{Exposed Reserves} = \text{SNB Reserves} - \text{SNB Exemption} \\ = 20 * \text{Reserve Requirement (MRR)}$$

- continuous treatment intensity

$$ER_i = \text{Exposed Reserves}_{i,12/14} / \text{Total Assets}_{i,12/14}$$

- $ER_i$  can be  $>$  or  $< 0$ , but  $\Delta ER_i > 0$  always means “more adverse NIRP-exposure”

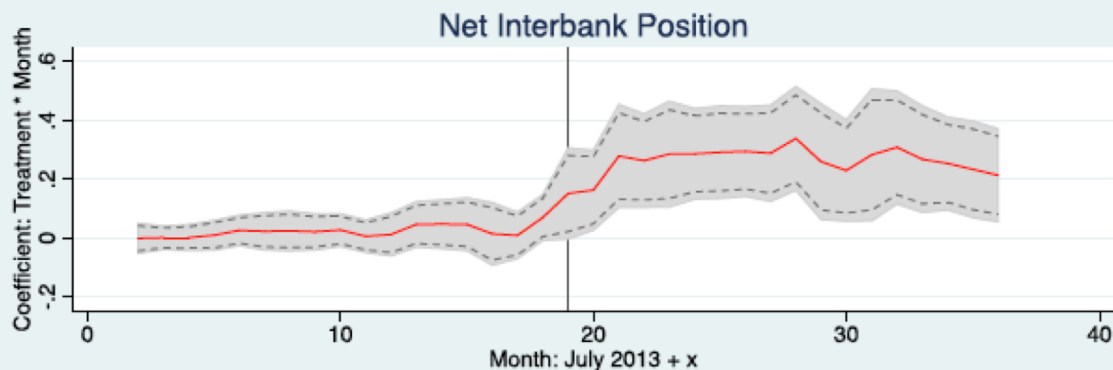
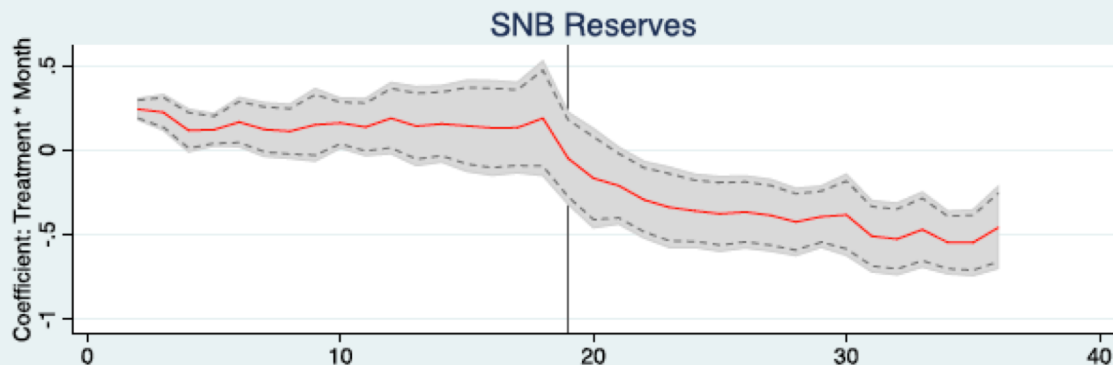
- exemptions

- did not target individual banks
- idea: affect marginal, but insulate total cost (  $\text{system-wide liquidity} = 24 * \sum[\text{MRR}_i]$  )

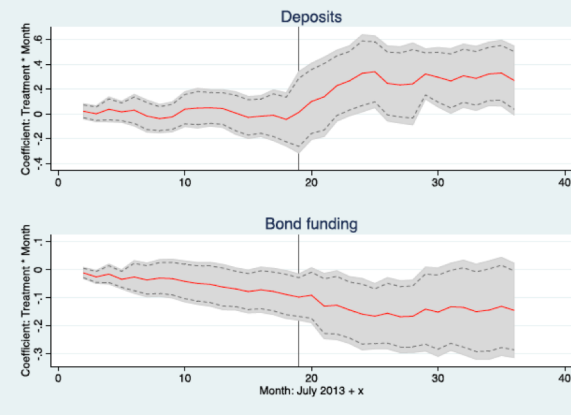
# MONTH-BY-MONTH EFFECTS (on % of TA)

- parallel pre-treatment trends ✓

## SNB Reserves & NIB Position



## Deposits & Bonds



## Mortg. & Loans



# MAIN RESULTS

- *being more adversely exposed to NIRP* ( $ER_i \nearrow 430\text{bp}$ ) ...
  - induces a **reallocation of reserves** to the IB market (SNB Res/TA  $\searrow 240\text{ bp}$ ; NIB Position/TA  $\nearrow 112\text{ bp}$ ),
  - **portfolio rebalancing** towards riskier & longer-term assets (Loans/TA  $\nearrow 60\text{ bp}$ ; Mortgages/TA  $\nearrow 69\text{ bp}$ ),
  - and a **restructuring of liabilities** towards ST deposits (Bonds/TA  $\searrow 60\text{ bp}$ ; Deposits/TA  $\nearrow 95\text{ bp}$ )
- ... ultimately leads to riskier balance sheets (Reg. cap.  $\searrow 30\text{ bp}$ ; IRR  $\nearrow 43\text{-}77\text{ bp}$ )
- NIRP creates **costs** → banks **preserve their profitability**
  1. **negative rates** on all liquid assets,
  2. **ZLB on deposit rates** implies negative liability margin,
  3. cutting non-deposit liabilities more means **higher avg. funding costs** for more adversely exposed banks
  1. allocate reserves to **more attractive assets** (e.g., mortgages) & other currencies,
  2. **reduce borrowing**,
  3. higher **fee income & mortgage rates**
- transmission is different from positive rate environments

# ADDITIONAL RESULTS & CONCLUSION

- swap use & market power do not drive up mortgage rates
- higher pre-treatment deposit rates mute the effects
- NIRP-effect dominates effect of a generic rate cut
- at -0.75% *Reversal Rate* is likely not reached
  - rate cut no less expansionary than 2011; more expansionary for weakly cap'ed banks
- robustness: alt. treatment, border cantons, foreign owned & Wealth Mngmt banks
- To take away:
  - transmission is different from positive rate environments
  - more adverse NIRP-exposure → riskier balance sheets

Thank You!